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BIRCH STEWART KOLASCH & BIRCH
PO BOX 747
FALLS CHURCH, VA 22040-0747

EXAMINER	
CALANDRA, ANTHONY J	
ART UNIT	PAPER NUMBER
1791	

NOTIFICATION DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

Office Action Summary	Application No.	Applicant(s)	
	10/541,775	PAREN ET AL.	
	Examiner	Art Unit	
	ANTHONY J. CALANDRA	1791	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10/08/2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *13-15 and 17-32* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *13-15 and 17-32* is/are rejected.

7)☒ Claim(s) *17* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Detailed Office Action

1. The communication dated 10/08/2008 has been entered and fully considered.

2. Claims 13 and 17 have been amended. Claim 16 has been cancelled. Claims 32 and 33 have been renumbered to claims 31 and 32, respectively. Claims 13-15, 17-32 are currently pending.

Claim Objections

3. Claim 17 objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Applicant amended claim 17 to change dependency since claim 16 was cancelled. Applicant mistakenly set the dependency of claim 17 to be dependent upon itself. The examiner will treat claim 17 as dependent on instant claim 13.

Response to Arguments

4. In view of amendment the 102 rejections based on NISHINO have been withdrawn. The 103 rejections still stand.

5. Applicant's arguments filed 10/08/08 have been fully considered but they are not persuasive.

Applicant argues that NISHINO does not teach a polymer solution having a pH of at most 6. Applicant refers to the pH given of 6.9 to 10.2 [column 10 lines 62-67]. Additionally applicant has instant claim 17 which states the pH is at most 5.

NISHINO teaches the pH of 6-11 [column 7 lines 40-43 and *claim 11*]] and two preferred pH's of 6-8 [column 8 line 32-33] and 8 to 10 [column 7 line 43] for the polymer stabilization solution are disclosed. Therefore at least one point taught by NISHINO is at least abutting with the instant claimed range of instant claim 13. A solution with a pH of 5.9 or 5.95 would perform the same function, in substantially the same way and yield substantially the same result as the pH of 6 claimed by NISHINO. A person of ordinary skill in the art could additionally reasonably expect a pH decrease of 1 or 1.5 from the pH of 6 of NISHINO to be successful as they are all acidic pHs. A person of ordinary skill in the art would be motivated to optimize the pH of the solution [see e.g. MPEP 2144.05 (II) (B) Optimization of ranges and result effective variables] through routine experimentation. Applicant has not given any arguments as to why it would not be obvious to optimize the pH through routine experimentation. NISHINO discloses how the pH's may be changed to be more acidic or more basic [column 7 lines 45-52]. Adjustments and optimization of pH is a common and well known technique for a person of ordinary skill in the art.

Applicant additionally argues that the optimization of pH would be improper. Applicant argues that NISHINO teaches a preferred pH. Applicant argues that based on the instant specification at a pH of 7.3 the solution is not stable while at a more acidic pH the solution is stable.

Applicant's argument is based upon a pH of no greater than 6 having an unexpected result of having a stable solution as compared to a pH of 7.3. Applicant must compare the instant claims to the closest prior art which would be a pH of 6 in NISHINO [716.02(e) Comparison With Closest Prior Art]. In the arguments the applicant only compared the instant invention to

the pH of 7.3 which is not the closest prior art of NISHINO. The closest prior art of NISHINO is the slightly acidic pH of 6. As a pH of 6 is also acidic it would be expected, absence evidence to the contrary, that the solution would also be stable at this pH. Further, as NISHINO teaches acidic and alkaline pH's the trend of stability would be visible to a person of ordinary skill in the art practice the various embodiments of NISHINO including acidic (pH of 6), neutral (pH of 7) and alkaline (pH of 8).

Applicant argues that as explained in the specification steps a) and b) are carried out in the same bleaching step and that step b) is carried out essentially immediately after the addition the addition of the two polymers. Applicant argues that NISHINO includes a separate bleaching step followed by washing [column 16 lines 24-28] and that the pretreatment time last for about 15 minutes.

Applicant's arguments are not commensurate with the claim language. The claim language does not prevent there from being a step in between steps a) and b). The claim language also does not disclose a treatment time for step a and b. The claim language does not exclude washing. The examiner cannot read additional claim limitations from the specification into the claim [see e.g. MPEP 2111.01 (II)].

Additionally, while applicant gave one embodiment of washing in between pretreatment and bleaching, NISHINO also describes an embodiment without washing (The pretreated fiber material is ***optionally*** rinsed with water and squeezed or dehydrated before the bleaching procedure [column 9 lines 10-15]).

Finally, NISHINO additionally teaches adding stabilizing pretreatment chemical and peroxide simultaneously (to bleach the fiber material by a bleaching liquid containing a peroxide bleaching agent and the stabilizing agent [abstract]). As such NISHINO teaches pretreatment then peroxide and teaches peroxide and pretreatment simultaneously. The applicant's argued (but not claimed) time in between steps falls within these two bounds. As such it would be obvious to change the order of addition of chemicals absent evidence of unexpected results [see e.g. MPEP 2144.04 (IV) (C) Changes in Sequence of Adding Ingredients].

Applicant argues that NISHINO only teaches two chelants most likely because other tested chelants worked unsatisfactorily. Applicant argues that EDTMP acts unsatisfactorily. Applicant argues that applicant incorrectly labeled EDTMP as a sulfonic acid while it is in fact a phosphonic acid.

The name and the abbreviation do conflict, as such it is not clear which compound that NISHINO is referring, NISHINO again conflicts on table 1. Giving the applicant's interpretation of the evidence that NISHINO meant phosphoric based compounds it is the examiners position that HYDE would still be a valid combination.

HYDE teaches multiple chelant compounds include phosphorous based compounds, polymeric chelants [column 3 lines 25-52], and citric/tartaric/gluconic acids [column 3 lines 55-60]. Both the chelants of NISHINO and HYDE are known to absorb metals. Substituting one chelant for another known chelant is obvious to a person of ordinary skill in the art. There is no teaching to suggest that no other chelants would work in the system of NISHINO; specifically

there is not teaching that only nitrogen containing chelants will work. Applicant has not shown any unexpected results from using a non-nitrogen containing chelant.

Applicant argues that NISHINO states combinations of only two components A, B, and C are ineffective.

Compound A is homo/copolymers of hydrocyacrylic acid. Compound B is a copolymer of other monomers such as maleic acid. Compound C is a chelant. The quoted sentence of NISHINO only means that a chelant must be present with the other two polymers for the stabilization to be effective. NISHINO teaches the species of nitrogen containing chelants. NISHINO does not state any criticality to the chelant containing nitrogen. Therefore a person of ordinary skill in the art could choose from any of the non nitrogen chelants and expect success as they all absorb unwanted degrading metals.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.

2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

8. Claims 13, 17-26, 29-32 are rejected under 35 U.S.C. 103(a) as obvious over U.S. Patent 6,120,556 NISHINO et al., hereinafter NISHINO.

As for claim 13 and 17, NISHINO discloses a method of bleaching pulp with peroxide in an alkaline medium [column 10 lines 5-20].

NISHINO discloses a polymer solution with both an alpha-hydroxyacrylic acid polymer and a second polymer including polyacrylic acid, poly methacrylic acid, polymaleic acid and the copolymers of the above mentioned acids which is applied to fiber solutions (*a polymer solution containing a first polymer (A) comprising a homopolymer of acrylic acid, methacrylic acid or maleic acid, or a copolymer of acrylic acid and/or methacrylic acid with an unsaturated dicarboxylic acid, and a second polymer (B) comprising a poly-alfa-hydroxyacrylic acid or a salt thereof, said polymer solution having a pH of at most 7, is added to a cellulosic fibre material* [column 5 lines 25-38, 55-68 and column 6 lines 1-20]).

NISHINO teaches that subsequent to the pretreatment process the pulp is then bleached with peroxide (*thereafter adding a peroxide compound and an alkaline substance and carrying out the bleaching* [column 7 lines 19-20].

NISHINO teaches that the polymer solution can range from a pH of 6 to 11 [column 7 lines 40-43] which is abutting with the instant claimed range of at most 6. NISHINO further gives the more specific range of preferably 6 to 8 [column 8 lines 32-34]. NISHINO discloses how the pH's may be changed to be more acidic or more basic [column 7 lines 45-52].

Adjustments and optimization of pH is a common and well known technique for a person of ordinary skill in the art. At the time of the invention it would have been well with the capability of a person of ordinary skill in the art to optimize the pH of the treatment to at most 6 or to at most 5 through routine experimentation. The pH of the solution is a clear result effective variable. A solution with a pH of 5.9 or 5.95 would perform the same function, in substantially the same way and yield substantially the same result as the pH of 6 claimed by NISHINO. A person of ordinary skill in the art could additionally reasonably expect a pH decrease of 1 or 1.5 from the pH of 6 of NISHINO to be successful.

As for claims 18-20, NISHINO discloses that the polymer solutions include acidic polymers which means that the pH's are at least less than 7 [column 6 lines 5-20]. NISHINO does not disclose the pH of the raw polymer in the specification. However, since the raw polymers are substantially the same (composed of homopolymerization or copolymerization of the same base units), it is the examiners position that without evidence to the contrary that the same raw materials would have the same initial pH.

As for claims 21-23, NISHINO discloses one specific copolymer, 'copolymer 5' with an average MW of 50,000 with is one specific point in the instant claimed ranges [Table 1 notes Copolymer 5].

As for claims 24-26, NISHINO discloses that the alpha-hydroxyacrylic acid has an average MW of 3,000-100,000 which overlaps with the instant claimed ranges with sufficient specificity.

As for claim 29, NISHINO discloses the poly-alpha-hydroxyacrylic acid polymer to be in a 1:2 ratio (33%) with the polyacrylate polymer and therefore falls within the instant claimed range [Table 1 example 2].

As for claim 30 and 31, NISHINO discloses that the pretreatment chemical is preferably supplied from 0.01 to 5% by weight of dry fiber, wherein the polymers comprise about 60% [column 9 lines 24-25 and Table 1]. This is equivalent to .006 to 3 kg per ton pretreatment chemical which overlaps with the instant claimed range with sufficient specificity.

As for claim 32, NISHINO discloses that the fibers that are to be bleached can be chemical (kraft/sulfite), mechanical, semi-chemical, or waste-pulp fibers which the examiner has interpreted as fibers that have been deinked [column 8 lines 66-67 and column 9 lines 1-4].

9. Claims 14-15 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 6,120,556 NISHINO et al., hereinafter NISHINO in view of U.S. Patent 4,238,282 HYDE, hereinafter HYDE.

As for claim 14, NISHINO discloses using a nitrogen containing chelants such as DTPA and TTHA are added to optimize stability. NISHINO discloses other examples wherein DTPA and TTHA are not added, however these show lower peroxide stability [Table 1 comparative example 2]. HYDE discloses non nitrogen containing chelants such as the phosphonates [column 2 lines 15-65]. HYDE additionally discloses polymeric chelants [column 3 lines 25-52], and citric/tartaric/gluconic acids [column 3 lines 55-60]. HYDE states that these compounds are useful for removing iron and manganese [column 1 lines 63-65]. At the time of the invention it would obvious to use the phosphonate chelant of HYDE in the pretreatment of NISHINO. It is

prima facie obvious to substitute one known chelant for another known chelant. A person of ordinary skill in the art would have expected both chelants to remove undesirable metals and prevent peroxide decomposition.

As for claim 15, NISHINO states that the use of additional magnesium is optional and as such discloses a method for treating pulp without said alkaline earth metals [column 7, lines 59-62].

As for claim 17, NISHINO discloses the pretreatment pH range of 6 to 11 [column 9, lines 43-45]. The teaching of an acidic pH of 6 would give an artisan a reasonable expectation of success at an acidic pH of 5. At the time of the invention it would have been *prima facie* obvious to a person of ordinary skill in the art to optimize the pH of the treating absence evidence of unexpected results at a pH of 5 compared to the disclosed pH of 6.

Alternatively, should a person of ordinary skill in the art have substituted the chelant of HYDE for the chelant of NISHINO a pH of 2-6 would have been desirable for treatment of the pulp [column 4, lines 5-9]. A person of ordinary skill in the art would be motivated to use such a pH as these pHs are where said chelating agents are most effective [column 4 line 10].

10. Claims 27 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 6,120,556 NISHINO et al., hereinafter NISHINO in view of U.S. Patent 6,444,771 YAMAGUCHI et al., hereinafter YAMAGUCHI.

As for claims 27 and 28 NISHINO discloses that a polymer containing the copolymers of maleic acid and acrylic acid is used for preserving peroxide stability [column 6 lines 5-20]. NISHINO does not disclose a copolymer with the range of maleic acid as the instant claimed

ranges. YAMAGUCHI discloses an acrylic/maleic acid copolymer with a polymer ratio of 40:60 to 60:40 [column 6 lines 22-32]. At the time of the invention it would have been obvious to substitute the polymer of YAMAGUCHI for the polymer of NISHINO. It is prima facie obvious to substitute one known polymer for another known polymer intended for the same use. A person of ordinary skill in the art would have a reasonable expectation of success for using the polymer of YAMAGUCHI as NISHINO stated that copolymers of malice/acrylic acid could be used. Further, YAMAGUCHI suggests that the disclosed polymer also prevents scaling and has high metal ion scavengability [column 1 lines 10-15].

Conclusion

11. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ANTHONY J. CALANDRA whose telephone number is (571)

270-5124. The examiner can normally be reached on Monday through Thursday, 7:30 AM-5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Griffin can be reached on (571) 272-1189. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/AJC/

/Eric Hug/
Primary Examiner, Art Unit 1791